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				PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO	WORK UNIT ACCESSION NO	
11. TITLE (Include Security Classification)								
Performance Oriented Package Testing of the M205, M218, M219, & M220 Propelling Charges								
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17			18. SUBJECT TERMS (6					
FIELD	FIELD GROUP SUB-GROUP Performance Propelling:			Oriented Package Testing of Charges, M205, M218, M219, M220 packed IAW DWG 9313721				
19. ABSTRACT	(Continue on	reverse if necessary	and identify by block n	number)				
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This	report co	ntains the te	sting and test n	results of Pe	erformance O	riented Pac	:kage	
Testing on Charges, Propelling: M205, M218, M219, M220 packed in accordance with							vith	
ARDEX	DWG. 931	3721 (672 per	fiberwoard box)	l .			•	
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Jame	s Newcomb	C		(201) 72	4-2772	SMCAR-	AEP	

I. Report Number: DOD POP HM TR/AYD 92-026

II. Title: Performance Oriented Packaging Testing for M205,

M218, M219, M220 Propelling Charges.

Packed 672 per fiberboard box in accordance with

ARDEC DWG. 9313721.

Author: James Newcombe

Performing Activity: ARDEC

Address: Department of the Army

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Attn: SMCAR-AEP (Bldg. 455)

Date: December 1992

Approved for public release; distribution is unlimited.

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1. Data:

Container:

Type: Box, Fiberboard

UN Code: 4G

Specification Number: PPP-B-636

Material: Fiberboard Capacity: 154.5 liters

Dimensions: 70cm x 55.4cm x 39.84cm

 $(27 9/16" \times 21 13/16" \times 15 11/16")$

Product:

Name: M205

Part Number: 9280588

United Nations Number: UN 0161 United Nations Packaging Group: II

United Nations Nomenclature: POWDER, SMOKELESS

Physical State: Solid

Amount per Container: 672 Propelling Charges

NSN: 1315-01-050-8882

Name: M218

Part Number: 9300234

United Nations Number: UN 0242 United Nations Packaging Group: II

United Nations Nomenclature: CHARGES, PROPELLING FOR

CANNON

Physical State: Solid

Amount per Container: 672 Propelling Charges

NSN: 1315-01-290-1598

Name: M219

Part Number: 9378134

United Nations Number: UN 0242

United Nations Packaging Group: II

United Nations Nomenclature: CHARGES, PROPELLING FOR

CANNON

Physical State: Solid

Amount per Container: 672 Propelling Charges

NSN: 1315-01-290-1597

Name: M220

Part Number: 9381510

United Nations Number: UN 0242 United Nations Packaging Group: II

United Nations Nomenclature: CHARGES, PROPELLING FOR

CANNON

Physical State: Solid

Amount per Container: 672 Propelling Charges

NSN: 1315-01-329-2575

2. Background:

This report contains the testing and test results performed on propelling charges packed in a fiberboard box manufactured in accordance with PPP-B-636, Style CSSC, Type CF, Class water-resistant, Grade V3C. 672 Propelling charge containers were utilized to simulate the proper content weights. The weight of the single packed out box was 88 lbs. The method of packing was consistent with ARDEC DWG. 9313721.

3. Testing

Note: All testing was performed in accordance with referenced sections of CFR 49, except that one complete pack was used in lieu of multiple packs for each test due to the limited supply of propelling charges at the time of testing.

a. Drop Test (178.603)

Procedure:

One container was dropped in the following orientations: flat on bottom, flat on top, flat on long-side, flat on short-side, and the top-right-rear corner. The height for all five drops was 1.2 meters.

Results:

There was no visible damage on the first four drops. The final corner drop produced a slight tear on the edge of the outer box, however, the contents did not spill and the container was easily capable of being handled without danger of spillage. The container configuration satisfied the passing criteria of CFR 49 for the 1.2 meter Drop test.

b. Vibration Test (178.608)

Procedure:

One container was allowed to vibrate unrestrained for a period of one hour on a "loose cargo" machine with a peak to peak displacement of one inch and a frequency of 210 cycles/minute. This frequency and displacement were sufficient enough to allow a 1/16" thick piece of metal strapping to slide underneath the box.

Results:

Besides some minor abrasions to the bottom and sides of the box, there was no notable damage as a result of the vibration. The container configuration satisfied the passing criteria of CFR 49 for the Vibration test.

c. Stack Test (178.606)

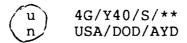
Procedure:

A dead load of 704 lbs. was applied to the top of the packed out fiberboard box for a period of 24 hours. This load represents the weight imposed on the bottom container for a stacking height of 10 feet.

Results:

Although there was a uniform compression of approximately 1/16" on the container, it still adequately supported the imposed load. The container configuration satisfied the passing criteria of CFR 49 for the Stack test.

- 5. References:
- a. Federal Register, "49 CFR Part 107, 1991"
- 6. Based on the above test results, the criteria for Performance Oriented Packaging for this item as specified in CFR 49 have been either met or exceeded. The following POP symbol shall be applied to containers that are packed IAW ARDEC DWG. 9313721.



** Insert last two digits of year in which container is packed out